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ABSTRACT

While most librarians are aware of the increasing amount of electronic resources available in and from libraries, they may not realize how much World Wide Web information is being used in higher education classrooms. Making a web page with links to related sites for use in class and instructing students on finding Web information can be a daunting task for many faculty members and teachers. Librarians are filling a new role in the classroom by providing assistance in searching the Web for class resources, and teaching Internet searching techniques. This paper focuses on librarians' experiences in a new experimental multimedia classroom at Rice University (Texas). It details the role one librarian has had in re-examining the traditional roles of a librarian and how those can be applied to working with faculty using the World Wide Web in a multimedia classroom environment. The paper discusses selecting web resources and teaching web searching techniques for a Physics and Astronomy class. It covers how librarians can manage the collaboration process with faculty, searching the Internet for resources, evaluating resources, organizing web pages, and teaching Internet searching to students and faculty. (SWC)

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The Universe at Your Fingertips: Continuing Web Education

April 25, 1997 University Center University of California, Santa Barbara

Navigating the Universe of Web Information in the Multimedia Classroom

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Abstract

As higher education institutions continue to increase the amount of technology in the classroom, the amount of world wide web information that supplements coursework continues to grow. Making a web page with links to related sites for use in class and instructing students on finding web information can be a daunting task for many faculty members and teachers. Librarians are filling a new role in the classroom by providing assistance in searching the web for class resources and teaching internet searching techniques. This paper will focus on librarians experiences in a new, experimental multimedia classroom at Rice University. In particular, it will detail the role one librarian has had in re-examining the traditional roles of a librarian and how those can be applied to working with faculty using the world wide web in a multimedia classroom environment. As is particularly appropriate to the universe theme of the conference, the librarian will discuss her work in selecting web resources and teaching web searching techniques for a Physics and Astronomy class at Rice. While this presentation details the experiences at one institution, the topic is applicable to any librarian working with teachers/faculty members. This presentation is primarily geared towards institutions of higher education, but is appropriate for all levels. It will cover how librarians can manage the collaboration process with faculty, searching the internet for resources, evaluating resources, organizing web pages, and teaching internet searching to students. Specific examples of web pages and instructional tools will be provided.

Discussion

While most librarians are aware of the increasing amount of electronic resources available in and from libraries, they may not realize how much web information is being used in today's higher education classrooms. Librarians have the opportunity to go

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beyond the walls of the library and help teachers and students understand how to search the web effectively, find resources, evaluate these resources, and use these resources for teaching and learning.

At Rice University (http://www.rice.edu), the construction of a multimedia classroom in the library has provided an opportunity to examine the roles a librarian can play in such an environment. In the Summer of 1994, Rice University was awarded a grant from the Charles E. Culpeper Foundation to provide a data librarian and an educational specialist for support of a new Electronic Studio. This studio, known as the Gardiner Symonds Teaching Laboratory (http://cttl.rice.edu/projects/Symonds), houses semester-long classes from a wide-variety of disciplines, as well as single-session workshops and seminars. The Symonds Laboratory is housed in Fondren Library (http://riceinfo.rice.edu/Fondren), the main library at Rice, and it is maintained by Information Technology's Center for Technology in Teaching and Learning (http://cttl.rice.edu), of which the data librarian is a member. In the Spring of 1996, the Lab was officially dedicated and a data librarian for the facility was hired in the Summer of 1996.

Collaboration with Course Instructors

This librarian was charged with working with course instructors in the Laboratory to help them acquire and organize materials for educational purposes. The librarian first worked with the teachers and students from the course Natural Science 111 (NSCI 111), Science Today I: Physics and Astronomy. Experiences from this course would then be used to gauge what librarian skills were most and least helpful in a multimedia environment, especially in relation to using the web. The NSCI 111 course is an integrated survey of key principles in physics and astronomy, intended for nonscience/engineering majors.

The two sections of the class were conducted in the Symonds Laboratory. Given the collaborative architecture of the facility, classes were taught on a part lecture, part individual and teamwork basis. The class was equally divided between lecture and the instructors working with students individually as they navigated the web and worked on class assignments.

Prior to the first day of the course, the librarian met with instructors to discuss the goals of the course and the resources that would best assist in achieving these goals. The instructors wanted to use many web resources to supplement students' research. In addition, students would be submitting their homework on their own personal web pages, which would require students learn how to build such pages. The instructors and librarian agreed that there would be a main course page, linking to other related pages. The instructors were responsible for maintaining the following sections: Syllabus and Weekly Schedule, Important Current Announcements, Course Instructors, and Class Roster. The librarian maintained links to relevant web resources for each week's assignments. The result of these efforts can be found at the Natural Science 111 course page site (http://www.owlnet.rice.edu/~nsci111).

Selection and Evaluation of Resources

As many collection development librarians know, it can be difficult to evaluate resources in an area where you have limited expertise. In the case of the Physics and Astronomy course, the librarian used standard search engines and subject guides such as Yahoo (http://www.yahoo.com), Excite (http://www.excite.com), HotBot

(http://www.hotbot.com), AltaVista (http://www.altavista.com) and MetaCrawler (http://www.metacrawler.com) to find some initial resources related to each week's topics. In addition, many selected sites had links to other sites that were deemed useful. Each web site that was eventually linked from the NSCI 111 page was selected using several evaluative criteria.

- Is an author listed?
- What are the credentials of the author?
- Will the author be held accountable for information presented?
- Is there a bias or a commercial interest?
- Who is the intended audience of the page?
- How current is the information?
- Are references, citations, or links to other resources included?

Those sites such as those presented by NASA (National Aeronautics and Space Administration), educational institutions, and museums were generally preferred to pages such as ones presented by individuals with an interest in a particular topic, but without expertise in the area. The selected sites tended to have reliable, accurate information with a mission to educate the users of the information. Those sites that were excluded were ones that contained inaccuracies, out-of-date information, and highly biased information. All sites were reviewed by course instructors, as well as the librarian, before inclusion on the course web page.

By attending all of the classroom sessions, rather than just coming to the class for one bibliographic instruction session, the librarian was able to become more familiar with the topics covered, the needs of the course instructors, and the skills of the students. As the semester progressed and the librarian learned more about the class and the topics, web resources were added and removed from the course web page.

Teaching Internet Searching to Course Instructors and Students

While many resources were presented to students for each week's assignments, students were also asked to find their own web sites to support their research. At the beginning of the course, the librarian taught the students and teachers a one-hour class in Internet searching strategies (http://riceinfo.rice.edu/Fondren/Netguides/strategies.html) which covers the following topics:

- Formulating a Strategy
- Maximizing Your Search Results
- Evaluating Internet Resources
- Citing Internet Resources

In a variety of settings, librarians can use their traditional bibliographic instruction skills and apply those in teaching how to effectively search the Internet. This requires that librarians become familiar with several things:

- What types of information can be expected to be found on the Internet?
- Which Internet resources are best for searching for what types of information?
- What syntax is needed to refine a search query?
- How to effectively evaluate Internet resources.
- What is a reasonable search set on the Internet?

A librarian can gain and refine these skills by regularly using the Internet, reading articles and reviews of web sites and search engines, and working with experts in the subject areas being searched. Unlike traditional print and CD-ROM resources, Internet resources may be unstable and vary in the information contained from day-to-day. Librarians need to be flexible enough to effectively handle unpredictable situations.

In having the librarian working in the classes throughout the semester, the students were able to develop a relationship with the librarian where they felt comfortable asking for help with searching for information on the Internet. In addition, the students were able to build on and refine their web searching skills and learn more advanced searching techniques from the librarian. Also, the students gained a better appreciation of the web and its construction by building their own web pages for class.

The two faculty members who taught the NSCI 111 class were very positive about their experience in working with the librarian to find and identify useful resources for their class. In both their survey feedback and in-person interviews, both instructors said that working with the librarian in the classroom was an extremely valuable experience that allowed them to use a much wider-variety of resources that were very useful in the course.

Next Time Around: Lessons Learned

As noted earlier, the librarian working with the NSCI 111 classes gained insights into what types of roles could play in future courses. Several of these lessons can be summarized as follows:

- **Teaching Internet searching skills is one of the most valuable services a librarian can provide in helping others using the web.** If librarians become familiar with the various search engines/subject guides, their strengths and weaknesses, and their search syntax, it can be a useful time saver and help for those learning from the librarians.
- **It is important to realize that there are many forms in which information can be presented today.** Helping instructors and students realize that there is a variety of media such as books, journals, CD-ROMs, videotapes, microfiche, microfilm, Usenet newsgroups, as well as web sites that can all provide valuable information, can be of great service. Helping people learn how to retrieve items in this variety of media is another skill that a librarian can bring to the classroom.

In addition, several questions were raised by this experience:

- **While it is helpful to teach people how to find information, should librarians be expected to offer instruction of specific software applications?** It seems that librarians have learned how to use and teach the use of computer applications, but should they be expected to be experts in this area? This may be an increasing necessity for librarians. They especially need to be familiar with applications such as web browsers (Netscape, Microsoft Explorer), telnet (tn3720, wtnvt), and file transfer protocol (ftp) tools (fetch, WS_FTP), which are used to access information over the Internet.
- **Where do librarians draw the line on how much help is too much help?** It may be appropriate for librarians to help instructors and students find resources that suit

their needs, but does this mean that it's appropriate for librarians to do things such as building a specific web page of resources for a particular class? Traditionally, when assisting a class, librarians tend to pull out a few standard resources for use with the class—how do you best translate this for finding web resources for a class? There is a fine line between bringing librarian skills and doing work that could be done by an instructor's graduate teaching assistant.

- **While it is useful for getting to know the students and instructors better, is it worth a librarian's and a class's time for the librarian to attend every class session of a course?** The amount of time used to search for information, such as searching for information on the web, in a class can vary. The downtime from searching for information in a class may make it difficult to justify the librarian being available to the class for every session.
- **What are the skills and strengths of being a librarian—how can we apply these in these new situations**? Academic librarians should take the time to reconsider their current roles and think about how they can create new roles to meet their users' changing needs. The web and the advent of more multimedia resources (e.g., CD-ROMs, videotapes, laser discs) present greater opportunities and challenges for librarians to become experts in searching for, accessing, and retrieving information.

Conclusion

Librarians bring a number of useful skills to accessing today's technologically-based information. Experience in organizing, retrieving, and evaluating information, as well as the ability to teach these skills to others, is very applicable in the Information Age. Librarians can take these skills beyond the library walls into the classroom, campus, and community. With the increasing number of ways we can access information, librarians have more opportunities than ever to discover how their skills can be used to help others trying to find the information they need.

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